

Scheme of Teaching and Examination
B. Tech in Mechanical Engineering (01UG040)

| S. No. | Subject Code | Board of Study | SUBJECT | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|--------|--------------|-----------------------|--|------------------|-----------|-----------|---------------------------------|------------|------------|-------------|------------------|
| | | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-FY101 | Mathematics | Mathematics- I | 4 | 1 | 0 | 30 | 20 | 50 | 100 | 5 |
| 2 | SOE-B-FY102 | Chemistry | Engineering Chemistry | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 3 | SOE-B-FY103 | Physics | Physics- I | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 4 | SOE-B-FY104 | Computer Science Engg | Basic Computing | 3 | 0 | 2 | 30 | 20 | 50 | 100 | 4 |
| 5 | SOE-B-FY105 | Mechanical | Engineering Graphics | 1 | 0 | 4 | 30 | 20 | 50 | 100 | 3 |
| 6 | SOE-B-FY106 | Electrical Engg | Basic Electrical & Electronics Engineering | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 7 | SOE-B-FY107 | Electrical Engg | Basic Electrical & Electronics Engineering Lab | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| 8 | SOE-B-FY108 | Chemistry | Engineering Chemistry Lab | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| 9 | SOE-B-FY109 | Humanities | Spoken English Communication | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| | | | TOTAL | 17 | 01 | 12 | 180 | 210 | 360 | 750 | 24 |

I- Semester

L: Lecture T: Tutorial P: Practical ESE: End Semester Examination T.A: Teacher's Assessment. PRE- Progressive Review Examination

Department of Mechanical Engineering
Scheme of Teaching and Examination, B. Tech in Mechanical Engineering

B. Tech in Mechanical Engineering (II- Semester)

| S. No. | Subject Code | Board of Study | SUBJECT | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|--------|--------------|-----------------------|---|------------------|-----------|-----------|---------------------------------|------------|------------|-------------|------------------|
| | | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-FY201 | Mathematics | Mathematics- II | 4 | 1 | 0 | 30 | 20 | 50 | 100 | 5 |
| 2 | SOE-B-FY202 | Physics | Physics- II | 3 | 0 | 0 | 15 | 10 | 25 | 50 | 2 |
| 3 | SOE-B-FY204 | Civil | Basics of Civil Engineering | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 4 | SOE-B-FY205 | Mechanical | Engineering Mechanics | 3 | 0 | 2 | 30 | 20 | 50 | 100 | 4 |
| 5 | SOE-B-FY207 | Chemistry | Environmental Studies | 1 | 0 | 2 | 15 | 10 | 25 | 50 | 2 |
| 6 | SOE-B-FY208 | Computer Science Engg | Introduction to Artificial Intelligence | 2 | 0 | 2 | 30 | 20 | 50 | 100 | 3 |
| 7 | SOE-B-FY203 | Physics | Physics- II Lab | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| 8 | SOE-B-FY206 | Mechanical | Workshop Practice | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| 9 | SOE-B-FY209 | Humanities | Written English Communication | 0 | 0 | 2 | - | 30 | 20 | 50 | 1 |
| | | | TOTAL | 16 | 01 | 12 | 150 | 190 | 310 | 650 | 22 |

L: Lecture T: Tutorial P: Practical ESE: End Semester Examination T.A: Teacher's Assessment. PRE- Progressive Review Examination

Scheme of Teaching and Examination
B. Tech in Mechanical Engineering (01UG040)

III- Semester

| S. No. | Subject/Course Code | Subject/Course | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|--------|---------------------|------------------------------------|------------------|----------|----------|---------------------------------|------------|------------|-------------|------------------|
| | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-MA304 | Advanced Engineering Mathematics | 3 | 1 | 0 | 30 | 20 | 50 | 100 | 4 |
| 2 | SOE-B-ME301 | Thermo Fluids- I | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 3 | SOE-B-ME302 | Computer Aided Machine Drawing | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 4 | SOE-B-ME303 | Mechanics of Materials | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 5 | SOE-B-ME304 | Engineering Metallurgy | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 6 | SOE-B-ME305 | Plant Maintenance & Safety | 2 | 0 | 0 | 15 | 10 | 25 | 50 | 2 |
| 7 | SOE-B-CE305 | Disaster Management | 1 | 0 | 0 | 15 | 10 | 25 | 50 | 1 |
| 8 | SOE-B-ME306 | Thermo Fluids - I Lab | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| 9 | SOE-B-ME307 | Computer Aided Machine Drawing Lab | 0 | 0 | 4 | 0 | 30 | 20 | 50 | 2 |
| 10 | SOE-B-ME308 | Mechanics of Materials Lab | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| | | TOTAL | 20 | 1 | 8 | 180 | 210 | 360 | 750 | 25 |

L: Lecture T: Tutorial P: Practical ESE: End Semester Examination T.A: Teacher's Assessment. PRE- Progressive Review Examination

Scheme of Teaching and Examination
B. Tech in Mechanical Engineering (01UG040)
IV- Semester

| S. No. | Subject/Course Code | Subject/Course | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|--------|---------------------|--|------------------|----------|----------|---------------------------------|------------|------------|-------------|------------------|
| | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-ME401 | Machine Design | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 2 | SOE-B-ME402 | Thermo Fluids – II | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 3 | SOE-B-ME403 | Kinematics of Machines | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 4 | SOE-B-ME404 | Manufacturing Technology | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 5 | SOE-B-ME405 | Metrology and Mechanical Measurement (MMM) | 4 | 0 | 0 | 30 | 20 | 50 | 100 | 4 |
| 6 | SOE-B-CSE-411 | Introduction to Data Science | 2 | 0 | 0 | 15 | 10 | 25 | 50 | 2 |
| 7 | SOE-B-ME406 | Thermo Fluids – II Lab | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| 8 | SOE-B-ME407 | Manufacturing Technology Lab | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| 9 | SOE-B-ME408 | Metrology and Mechanical Measurement Lab | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| 10 | SOE-B-ME409 | Professional Development | 0 | 0 | 2 | 0 | 30 | 20 | 50 | 1 |
| | | TOTAL | 21 | 0 | 8 | 165 | 230 | 355 | 750 | 25 |

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Scheme of Teaching and Examination
B. Tech in Mechanical Engineering (01UG040)

V- Semester

| S. N | Subject/Course Code | Subject/Course | Periods per week | | | Examination Scheme | | | | | Credit L+(T+P)/2 |
|--------------|---------------------|---|------------------|----------|-----------|--------------------|-----|-------|-----|-------|------------------|
| | | | L | T | P | PRE | | | ESE | TOTAL | |
| | | | | | | TA | MSE | TOTAL | | | |
| 1 | SOE-B-ME501 | Thermal Engineering | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 2 | SOE-B-ME502 | Internal Combustion Engine (I.C) | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 3 | SOE-B-ME503 | Dynamics of Machine (DOM) | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 4 | SOE-B-ME504 | Operation Research Technique | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 5 | SOE-B-ME505 | Mechatronics | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 6 | SOE-B-ME506 | Thermal Engineering Lab | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 7 | SOE-B-ME507 | I.C. Engine Lab | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 8 | SOE-B-ME508 | KOM & DOM Lab | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 9 | SOE-B-ME509 | Seminars on Industrial Training | 0 | 0 | 1 | 25 | 0 | 25 | 25 | 50 | 1 |
| 10 | SOE-B-ME510 | Electric Vehicle Design and Development | 1 | 0 | 2 | 15 | 15 | 30 | 20 | 50 | 2 |
| TOTAL | | | 16 | 0 | 15 | 230 | 165 | 395 | 355 | 750 | 24 |

L: Lecture T: Tutorial P: Practical ESE: End Semester Examination T.A: Teacher's Assessment. PRE- Progressive Review Examination

Scheme of Teaching and Examination
B. Tech in Mechanical Engineering (01UG040)

SEMESTER VI

| S N | Subject /Course Code | Subject/Course | Periods per week | | | Scheme of Examination and Marks | | | | | Credit |
|--------------|----------------------------|--|---------------------|----------|-----------|------------------------------------|-----|-------|---------|-------|--------|
| | | | L | T | P | PRE | | | ESE | TOTAL | |
| | | | | | | TA | MSE | TOTAL | | | |
| 1 | SOE-B- ME601 | Heat & Mass Transfer | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 2 | SOE-B- ME602 | Machine Tool & Machining | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 3 | SOE-B- ME603 | Design of Machine Element | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 4 | SOE-B- ME604 | Energy Conversion System | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 5 | SOE-B- ME605 | Professional Elective- I (Annexure-I) | 3 | 0 | 0 | 20 | 30 | 50 | 50 | 100 | 3 |
| 6 | SOE-B- ME606 | Heat and Mass Transfer Lab | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 7 | SOE-B- ME607 | Machine Tool and Machining Lab | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 8 | SOE-B- ME608 | MATLAB Programming | 0 | 0 | 4 | 30 | 0 | 30 | 20 | 50 | 2 |
| 9 | SOE-B- ME609 | Professional Communication | 0 | 0 | 1 | 25 | 0 | 25 | 25 | 50 | 1 |
| 10 | SOE-B- ME610 | Principles of Management | 2 | 0 | 0 | 15 | 15 | 30 | 20 | 50 | 2 |
| TOTAL | | | 17 | 0 | 13 | 230 | 165 | 395 | 35 5 | 750 | 24 |

TA- Teacher Assessment, MSE-Mid Semester Examination; ESE-End Semester Examination, PRE- Progressive Review Examination.

Annexure-I

| Sr. No | Subject Code | Courses |
|-----------|-----------------|--|
| 1. | SOE-B-ME605 (1) | Gas Dynamics and Jet Propulsion |
| 2. | SOE-B-ME605 (2) | Computational Fluid Dynamics |
| 3. | SOE-B-ME605 (3) | Welding Technology |
| 4. | SOE-B-ME605 (4) | Material Handling System and Equipment |
| 5. | SOE-B-ME605 (5) | Additive Manufacturing |
| 6. | SOE-B-ME605 (6) | Power Plant Engineering |

Scheme of Teaching and Examination
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VII- Semester

| S. No. | Subject/Course Code | Board of Study | Subject/Course | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|-----------|---------------------|----------------|--|------------------|----------|-----------|---------------------------------|------------|------------|-------------|------------------|
| | | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-ME708 | Mechanical | Research Internship /Industry Internship | 0 | 0 | 44 | 0 | 250 | 250 | 500 | 22 |
| | | | TOTAL | 0 | 0 | 44 | 0 | 250 | 250 | 500 | 22 |
| OR | | | | | | | | | | | |
| 1 | SOE-B-ME701 | Mechanical | Refrigeration & Air Conditioning System | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 2 | SOE-B-ME702 | Mechanical | Professional Elective- II (Annexure-II) | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 3 | SOE-B-ME703 | Mechanical | Robotics & Automation | 2 | 0 | 0 | 30 | 20 | 50 | 100 | 2 |
| 4 | SOE-B-ME704 | Mechanical | Computer Aided Design and Manufacturing | 2 | 0 | 0 | 30 | 20 | 50 | 100 | 2 |
| 5 | SOE-B-ME705 | Mechanical | Refrigeration and Air Conditioning Lab | 0 | 0 | 4 | 0 | 30 | 20 | 50 | 2 |
| 6 | SOE-B-ME706 | Mechanical | Robotics and Automation Lab | 0 | 0 | 2 | 0 | 15 | 10 | 25 | 1 |
| 7 | SOE-B-ME707 | Mechanical | CAD/CAM Lab | 0 | 0 | 2 | 0 | 15 | 10 | 25 | 1 |
| | | | TOTAL | 10 | 0 | 08 | 120 | 140 | 240 | 500 | 14 |

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Option A: The Students who opted for an Internship in the 7th Semester will have to choose Subjects in the 8th semester.

Option B: The Students who opted for Subjects in the 7th Semester will have to opt internship

OP JINDAL UNIVERSITY

OP Jindal Knowledge Park, Punjipatra, Raigarh-496109
Department of Mechanical Engineering

in 8th semester.

Professional Elective- II (**Annexure-II**)

| S. No. | Subject Code | Courses |
|---------------|---------------------|---|
| 1. | SOE-B-ME702 (1) | Industrial Engg and Production Management |
| 2. | SOE-B-ME702 (2) | Finite Element Method |
| 3. | SOE-B-ME702 (3) | Production Planning and Control |
| 4. | SOE-B-ME702 (4) | Automobile Engineering |
| 5. | SOE-B-ME702 (5) | Solar Energy Technology |
| 6. | SOE-B-ME702 (6) | Introduction to Stainless Steel |
| 7. | SOE-B-ME702 (7) | Process Planning and Cost Estimation |
| 8. | SOE-B-ME702 (8) | Total Quality Management |
| 9 | SOE-B-ME702 (9) | Innovation, Entrepreneurship and Leadership |
| 10. | SOE-B-ME702 (10) | TQM and Reliability Engineering |

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VIII- Semester

| S. No. | Subject/Course Code | Board of Study | Subject/Course | Periods per week | | | Scheme of Examination and Marks | | | | Credit L+(T+P)/2 |
|--------------|---------------------|----------------|---|------------------|----------|-----------|---------------------------------|------------|------------|-------------|------------------|
| | | | | L | T | P | PRE | | ESE | Total Marks | |
| | | | | | | | Mid Sem | TA | | | |
| 1 | SOE-B-ME701 | Mechanical | Refrigeration & Air Conditioning System | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 2 | SOE-B-ME702 | Mechanical | Professional Elective-II (Annexure-II) | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 3 |
| 3 | SOE-B-ME703 | Mechanical | Robotics & Automation | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 2 |
| 4 | SOE-B-ME704 | Mechanical | Computer Aided Design and Manufacturing | 3 | 0 | 0 | 30 | 20 | 50 | 100 | 2 |
| 5 | SOE-B-ME705 | Mechanical | Refrigeration and Air Conditioning Lab | 0 | 0 | 4 | 0 | 30 | 20 | 50 | 2 |
| 6 | SOE-B-ME706 | Mechanical | Robotics and Automation Lab | 0 | 0 | 2 | 0 | 15 | 10 | 25 | 1 |
| 7 | SOE-B-ME707 | Mechanical | CAD/CAM Lab | 0 | 0 | 2 | 0 | 15 | 10 | 25 | 1 |
| 8 | SOE-B-ME801 | Mechanical | Major Project | 0 | 0 | 20 | 0 | 150 | 100 | 250 | 10 |
| TOTAL | | | | 12 | 0 | 28 | 120 | 290 | 340 | 750 | 24 |
| OR | | | | | | | | | | | |
| 1 | SOE-B-ME708 | Mechanical | Research Internship / Industry Internship | 0 | 0 | 44 | 0 | 250 | 250 | 500 | 22 |
| 2 | SOE-B-ME801 | Mechanical | Major Project | 0 | 0 | 20 | 0 | 150 | 100 | 250 | 10 |
| TOTAL | | | | 0 | 0 | 64 | 0 | 400 | 350 | 750 | 32 |

| Option Chosen | Credit in VII-Sem | Credit in VIII-Sem | Total Credit |
|---------------|-------------------|--------------------|--------------|
| Option A | 22 | 24 | 46 |
| Option B | 14 | 32 | 46 |